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Chief Operating Officer and Chief of Staff

May 23, 2007

Professor Alex Farrell
University of California, Berkeley
310 Barrows Hall
Berkeley, CA 94720-3082

Professor Daniel Sperling
University of California, Davis
2027 Academic Surge Bldg.
Davis, CA 95616

Re: WSPA Comments on "A Low-Carbon Fuel Standard for California,
Part 1: Technical Analysis dated May 7, 2007

Sent via e-mail to:

www.its.berkeley.edu/sustainabilitycenter - aef@berkeley.edu

www.its.ucdavis.edu - dsperling@ucdavis.edu

Dear Professor Farrell and Professor Sperling:

WSPA is pleased to submit the following comments and attached materials on behalf of its member companies. We are committed to working cooperatively to develop a workable and effective Low Carbon Fuel Standard (LCFS) program. Following are comments on the report dated May 7, 2007 "A Low-Carbon Fuel Standard for California - Part 1: Technical Analysis".

We have focused these comments so they will be meaningful for you in preparing Part 2 of your work on the policy issues. Many of our recommendations are policy-based and are intended for your consideration in drafting Part 2. For your convenience, we have also attached WSPA's comments to CARB on the potential of listing the LCFS as a "discrete early action" under AB32.

General Comments:

Implementing a LCFS will not be an easy task. There are several significant constraints to achieving the objectives of the LCFS while at the same time assuring adequate, reliable and affordable supplies of transportation fuels to California's consumers.

When the low carbon fuel proposal was launched, WSPA commended the Governor for putting California science and technology experts to work on making sure this fuel standard rested on a solid scientific foundation. That's very important because this may be the most dramatic change in gasoline formulation ever attempted, and the state cannot afford to get this wrong – we have to get it right. Reliable fuel supplies are vital to the lives of all Californians and to the future of our economy.

The wisdom of Governor Schwarzenegger's careful approach is evident in your report. The report shows there is a great deal of promise for low carbon fuels, and much uncertainty. For example, the report recognizes the uncertainty that exists in the fundamental tool for measuring the carbon intensities of various fuels, the Life Cycle Analysis.

There are many other very important questions that need to be answered before a new rule is established, such as: Will there be adequate biofuels resources? Can permits and other authorizations be obtained for biofuel crops given the millions of acres of new crops and millions of gallons of water needed to grow them? Will cellulosic ethanol conversion and other technologies be commercially available? If so, when? Will needed vehicle technologies occur? Will there be a rigorous monitoring process measuring progress on the plan with specific milestones to ensure that decision-makers can make needed mid-course corrections without delaying implementation?

We raise these questions not to obstruct implementation of the low carbon rule, but to show what questions must be answered to help achieve the objective of a new low carbon gasoline rule that achieves real greenhouse gas reductions, while ensuring California will continue to have reliable fuel supplies.

Our industry has been constructively engaged in the process so far, and we are ready to roll up our sleeves and continue to work with the Administration, the UC research team, CARB, the CEC and other stakeholders in a collaborative process to find the answers to the important questions that must be addressed.

Report's Strengths:

We are very encouraged the report recognizes that:

- Technological innovation is important;
- It will take new investment in and technological innovation of low carbon fuel and distribution infrastructure to get there;
- Technological innovation needs to occur broadly in vehicles and fuels;
- We need to build markets so suppliers have incentive to innovate;
- California needs to support research and development for work further away from commercialization;

- All technical options have technical and economic uncertainties that need further research and evaluation;
- There is uncertainty in the analysis, and a need for improvement in data and tools to measure global warming intensity for a successful LCFS;
- There is no widely agreed upon life cycle analysis method for measuring all global warming impacts of transportation fuels;
- Uncertainties necessitate a careful approach to regulation and to compliance, and should be addressed by a significant, robust and continuing research effort;
- Meeting the targets will affect many other key priorities - economic growth, improved air quality, affordable energy prices, environmental justice, energy source diversification, environmental protection; and,
- Designing the LCFS should respond to:
 - Encouraging investment in current technology;
 - Stimulating innovation and development of new technologies; and,
 - Contributing to attainment of related objectives.

Concerns about the Report and Recommendations to Address Concerns:

The draft report is very comprehensive, and mostly it does a good job acknowledging the existence and ranges of uncertainty in many aspects of the analysis. However, we are concerned that these acknowledged limitations, which are critical to the analysis, are not referenced in the tables and charts, and will get lost in the text.

The report is therefore likely to give policy makers an overly optimistic view of the likelihood of success of the LCFS. Equally important, the report should emphasize that these uncertainties must be resolved before policy makers get too far down the LCFS path.

Categorically, the issues of most concern to us include the following. It would be helpful if you could clarify these issues in Part 2 of your report. They are:

- There seems to be a disconnect between the report's highlighting of the technical, logistical and scientific uncertainties, and its conclusion that the LCFS goal is attainable but ambitious, and as we heard at the Governor's Symposium that it is technologically feasible and cost-effective.

Although we are hopeful we can get there as all these important questions get answered, a cost-effectiveness evaluation on the various pathways has not yet been performed. We believe in Part 2 you should note the importance of completing this task.

- The need to recognize that both AB 32 and state law require a very careful examination of the scientific, economic and logistical challenges before new fuel rules may be established. We assume that your intent is to have the UC report serve as a foundation that will assist the CARB as it ventures down the regulatory path and performs this examination before adoption.

- The inadequacy of the various life-cycle analysis tools on which the key values, compliance criteria, and, indeed, the motivation for the program are based. We believe you should re-emphasize this in Part 2.
- While we are developing the regulation we also need to continue developing the life cycle tools and their resulting wells-to-wheels values, have them peer reviewed, and accepted as accurate. Values in Table ES-3 (attached) give pretty clear examples of the level of uncertainty of these models and even raise questions about some of the current policy proposals encouraging increased use of ethanol and FAME-based biodiesel.
 - Comparing the Global Warming Impacts (GWI) of Midwest corn ethanol from a gas-fired dry-mill with California RFG, the GREET model shows a 24 percent reduction and the LEM model shows there is a 14 percent increase.
 - Comparing the GWI of FAME biodiesel from Midwest soybeans with conventional diesel, the GREET model shows a 66 percent reduction and the LEM model shows over a 200 percent increase.

WSPA hired a consultant, ERM, to evaluate the TIAX report developed for the CEC in response to the AB1007 process. ERM reviewed GREET and other models being considered. Their observations are similar to observations made in the UC report and we have attached them here for your review and consideration in writing the Part 2 report.

We would be happy to set a meeting with you, others and ERM to go over their findings and recommendations. In short, the effectiveness and credibility of the LCFS program depends on the accuracy of and confidence people have in the models used to set the carbon intensities of fuels and impacts of the scenarios. A well designed collaborative effort in which stakeholders agree in advance to participate and respect the results in advance is necessary.

- The many other uncertainties inherent in this standard, including:
 - The lack of critical technologies and facilities required to produce the fuels;
 - The time it takes to develop, scale up, and commercialize technologies;
 - The time it takes to plan, design, permit and construct facilities; and,
 - An honest question of whether the state has the wherewithal to commit the acreage, water resources, and hardware necessary to grow a robust biofuels industry in California.
- Although technology innovation is described as crucial to success of the LCFS, the report could do a better job of addressing key factors necessary to advance technology, including describing the current state of the various technologies and identifying major technical gaps that need to be filled. Perhaps this is being considered in Part 2 as well.

- The lack of important economic information, including the costs of the various technologies, scenarios and the overall cost to the economy, as well as a determination of the consequences of the rule on the supply of transportation fuels and the demand for them. We understand the report recognizes that an economic review was not done in Part 1 and want to emphasize here the need to perform an economic review as part of the regulatory process.

California's continuing economic growth depends on the availability of adequate, reliable, and affordable transportation fuels. For that reason, the California's Health & Safety Code 43013 sets higher thresholds for determining the cost effectiveness, technical feasibility, and economic impacts of standards and regulations dealing with fuels.

It specifically requires the ARB to do the following when adopting or amending any motor vehicle standard or specification:

- Determine that a rule is technically feasible based on a preponderance of scientific and engineering data in the record, and that the determination includes the availability, effectiveness, reliability, and safety expected of the proposed technology in an application that is representative of the proposed use; and,
- Quantitatively document the significant impacts of the proposed rule on affected segments of the state's economy, which analysis shall include the significant impacts on fuel efficiency, the existing distribution system, competitive position of the affected segments relative to border states, and the cost to consumers.

The point is, given the described uncertainties, implementers of the LCFS will have a difficult time making a determination that the standard is feasible, cost effective, and without severe economic impact. Our recommendations below hopefully provide a pathway to assist in achieving the objectives within the regulatory timelines given the uncertainties we all face.

Specific Recommendations:

Given these ranges of uncertainty in key values, it is clear these models are not ready for prime-time policy making. A mistake in the standard's implementation could seriously impact the future availability, reliability, and affordability of transportation fuels.

We believe that tools and a process need to be put in place to more accurately identify the life cycle impacts of fuels, evaluate the economic impacts of the standard, and to signal the need for mid-course corrections. Specifically:

- 1. Establish a public/private collaborative to assemble a broad-based, representative, and technically competent team of individuals to provide input**

into the LCFS regulatory process. This is essential to continue to develop what we believe are two technical and economic elements of the LCFS.

These tools are necessary to implement successfully a scientifically and technically sound and cost effective LCFS and to assure that the ARB relies on the best available economic and scientific information. These tools include:

- Further review and improvements to the full fuel cycle models.

Establish a widely accepted and accurate full fuel cycle analysis method. It is noteworthy that the Report says there is no widely agreed on full-cycle analysis method, none has undergone rigorous review, and the products of the existing fuel cycle analysis are “in many cases highly uncertain.” It confirms that further review and development of a widely accepted, credible full cycle analysis tool are necessary.

- Development of a California-specific dynamic simulation transport energy model to evaluate and compare various LCFS scenarios.

Develop a California-specific dynamic simulation transportation energy model to evaluate and compare various LCFS scenarios for their economic impact. The CEC has recognized the need for such a model and has begun work on this critical ingredient to enhance the ability to evaluate the economy-wide and sector-specific impacts of LCFS measures.

This model can help assure the rules are cost effective and equitable within the requirements of AB 32. Attachment 1 of the WSPA letter we submitted to CARB, identifies how a collaborative process can assist in expediting and bringing the financial resources and expertise to advance the delivery of this valuable tool within the timelines of AB 32 and the LCSF.

Additionally, before we get too far down the regulatory path, there needs to be a clearer understanding of a whole range of unknowns and uncertainties. These include: the costs, status, and likelihood of new fuel and vehicle technologies needed to support the LCFS; the environmental and social impacts as well as the ability to permit a large biofuels industry in California in the proposed time horizon; and, more.

- 2. Schedule biennial milestones over the implementation period of the LCFS,** at which the CEC and ARB make findings and determinations if sufficient low carbon fuels and vehicles, are available to meet the LCFS requirements and maintain the reliability of the transportation fuel system. The milestones would include a review of the past LCFS performance, relevant developments in technology, projected vehicle sales, low carbon fuel project permitting, low carbon fuel project construction and external influences, such as the demand for low carbon fuels to supply the national program.

It is essential that the LCFS program contain scheduled milestones at which time progress toward achieving the standard is assessed by objective and measurable criteria, and policy makers are alerted to the potential for disruptions in transportation fuel supplies and associated market volatility.

We envision a stepwise implementation process in which the CEC and ARB review and evaluate progress. They would jointly make a determination that adequate LCFS fuel supplies and infrastructure are in place to allow implementation of the next steps of the LCFS in an orderly manner and with minimal disruption to the state's transportation fuel market.

Specifically, the LCFS program should have firm, well-defined scheduled milestones. At these milestones, CEC and ARB should review and evaluate progress. They should also jointly make findings and determinations and provide complete, transparent reports to the Governor and Legislature on:

- The availability of adequate and affordable LCFS fuel supplies and infrastructure in place to allow implementation of the next step of the LCFS in an orderly manner and with minimal disruption to the state's transportation fuel market;
- A measurement of the cost effectiveness of the LCFS compared to other greenhouse gas control measures as well as the total cost of the program to the state's economy; and,
- A measurement of the progress of the commercialization of the technologies needed to achieve the objectives of the LCFS; one such measure might be the volumes of low-carbon fuels (say 50 percent carbon intensity or less) compared with the scenario analyses done to support the program's adoption.

We understand there is reluctance to having a "safety valve" that could affect the technology forcing nature of the LCFS, but this need **not** be viewed as such. It is important for the state to track fuel supplies over time and alert policy makers if there are potential supply or market issues. This is not a suggestion to delay the process. We understand the regulatory timeframe that we are all under to meet the Governor's goals.

However, using a safety valve process provides the lead time necessary to implement contingency measures like those implemented in the 2001 electricity crisis, including extraordinary supply transactions, expedited siting and permitting, and contingency plans. We think such a process is necessary and prudent and is consistent with H&S Code §38599, which gives the Governor authority to adjust deadlines in the event of extraordinary circumstances.

It would be important from our perspective if Part 2 of your Report embraced the concepts of a Collaborative and the need for Milestones as two mechanisms to ensure our collective

success meeting the goals of the LCFS and AB32. A Collaborative can assist in the path forward to encourage investment in current technology, stimulate innovation and development of new technologies, and contribute to attainment of all related objectives.

Closing:

We look forward to reviewing Part 2 of your report. The policy recommendations will no doubt set the regulatory direction of the LCFS. We also look forward to working with you and the agencies as the state goes forward with this important rulemaking.

Very truly yours,

A handwritten signature in black ink, appearing to read "Catherine A. Boyle". The signature is fluid and cursive, with the first name "Catherine" written in a larger, more prominent script than the last name "Boyle".

cc: Brian Prusnek, Governor's Office
David Crane, Governor's Office
Linda Adams, CalEPA
Jackie Pfannenstiel, CEC
Bob Sawyer, CARB
Dan Skopec, CalEPA
Mike Scheibel, CARB
Dean Simeroth – CARB
Chuck Sulock – CARB
Richard Bode – CARB
Michael Robert – CARB
Alberto Ayala – CARB
Joe Sparano, WSPA
Michael Barr – Pillsbury, Winthrop, Shaw, Pitmann LLP

Attachment 1: Low Carbon Fuel Standard Technical Collaborative

Attachment 2: WSPA letter to Brian Prusnek, dated April 2, 2007